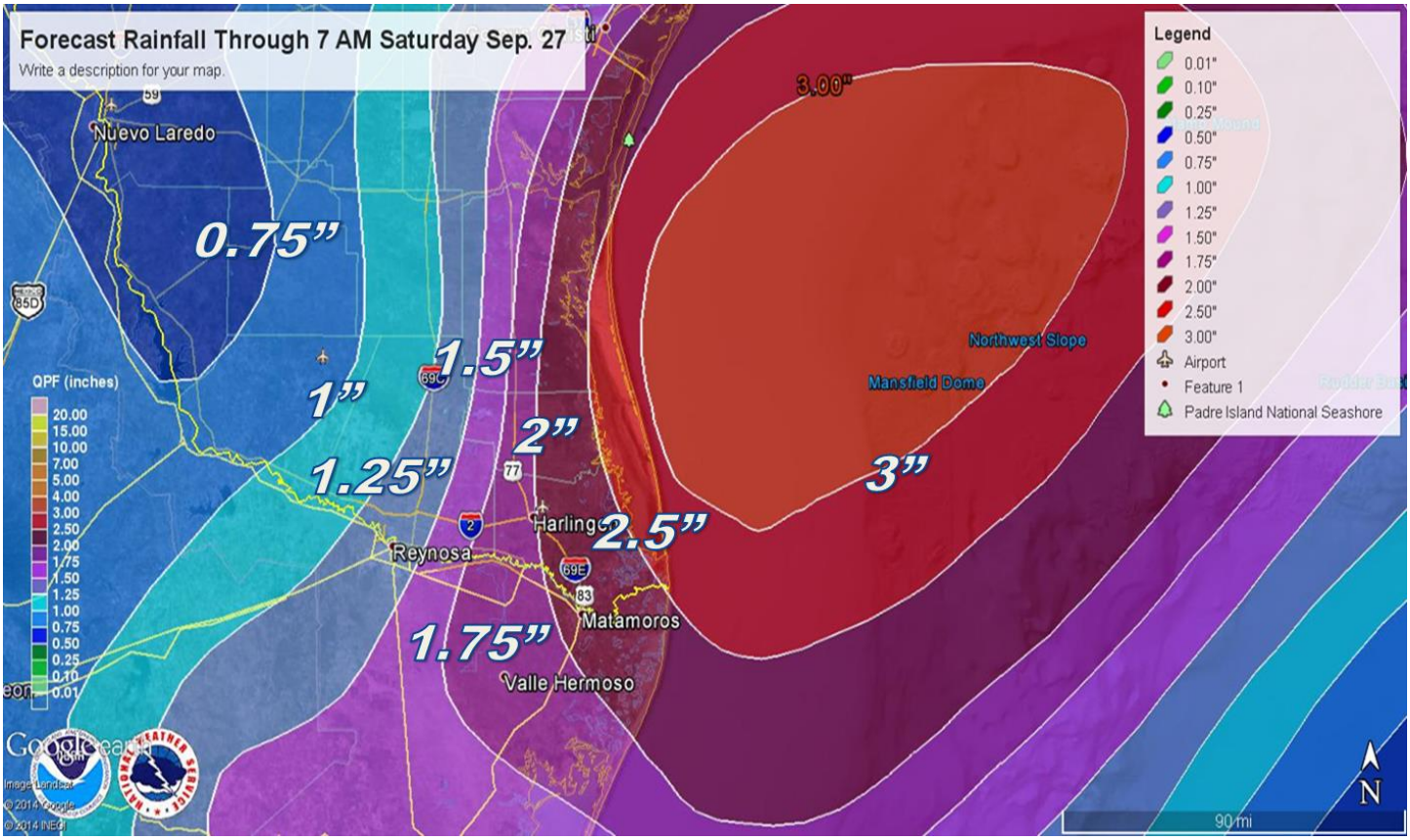
Forecast/Hazard Blog: September 24-27

More Rain to Fall Mainly on the (Saturated) Coastal Plain

Rising Tide/Overwash to Join the Party; Miserable Beach Weather through the 27th



The Skinny

Weak, disorganized upper level disturbances over/near South Texas will activate a weak surface trough of low pressure hanging along the coast through the end of the work week and probably into Saturday (Sept. 27). The system(s) will bring a prolonged cloudy, wet, and rough weather to the beaches, with periodic heavy rainfall edging into the RGV/King Ranch along and east of Highway 77, with lesser coverage of rainfall across the mid and upper Valley. The disturbances are forecast to lift north and dissipate by Sunday, which should bring improvement in the weather, particularly to the coastal areas. The primary concerns will be:

- Poor drainage flooding of low lying areas, especially if/when saturation develops (similar to Monday Sept. 15)
- Tide run up toward and perhaps into the dunes beachside, and high water levels at docks and perhaps unprotected residences bayside, at high tide tonight through Saturday (details below).

What to Watch For

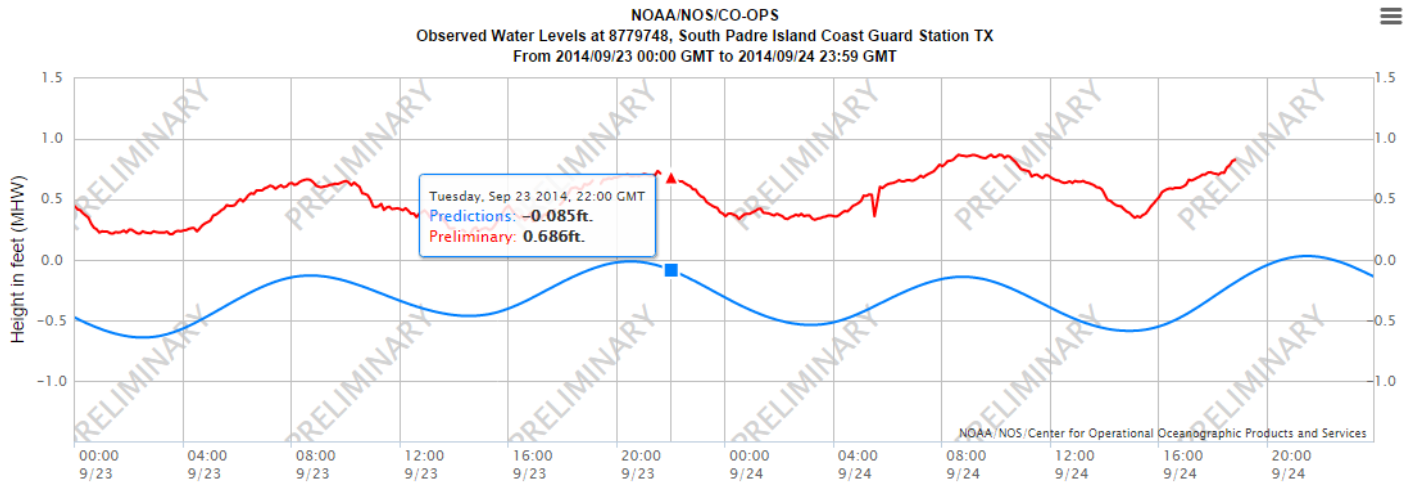
Rainfall.

- *Cameron/Willacy/Kenedy:* For Cameron and perhaps Willacy, ***Thursday*** offers the best chance for shower/thunderstorm "bands" to develop/move onshore from the wee hours through late morning, probably continuing periodically through the day. If you remember last Monday in Cameron, particularly Greater Brownsville toward Bayview, this could be familiar. The good news is we've seen limited widespread rainfall the past few days, which wasn't the case from September 12-14 and set the table for the numerous road closures and flood areas during the evening of the 15th. Still, one band dumping up to 2 inches in an hour or two will cause problems over certain areas. ***Friday*** could see a repeat of Thursday; data suggest the more active areas will shift north toward rural Willacy and the King Ranch . ***Saturday*** would favor widespread precipitation at the beaches and perhaps edging to Laguna Madre Bay, with more "scattered" coverage farther inland.

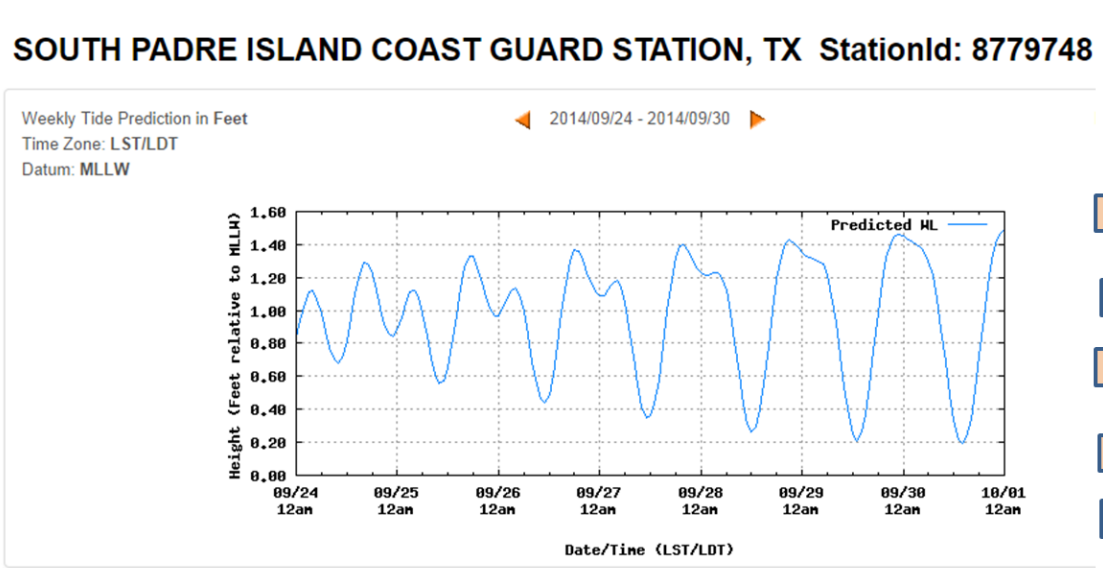
- *Elsewhere:* As we've seen recently from the mid Valley through the interior ranchlands out to Starr and Jim Hogg County, coverage decreased. This appears to be the trend through Saturday as well. Enough atmospheric energy exists to slide rain bands into Hidalgo and perhaps Brooks County during the morning hours Thursday; otherwise, thunderstorms will be more "hit and miss". Slightly more sunshine and heating will feed more intense thunderstorms or clusters; where the rain "hits" could get very wet, while nearby areas see only light rain/sprinkles or nothing at all. This type of setup explains why you see much lower totals across the mid/upper Valley through the Rio Grande Plains on average.

Tides.

Water levels continue to rise today, a combination of seasonal high tidal values (known as "astronomical tides" based on the moon and sun) and persistent onshore flow driven by persistent flow from the east/northeast.



Above: Tide levels (red) and predicted values (blue) based on Mean High Water, at the USCG Station South Padre Island, Bayside, from 7 PM Sept. 23 through 2 PM Sept. 24. Departures were about 1 foot above predicted; the difference was expected to increase through Thursday into Friday Sept. 26. Values above 1.0 feet typically match well with water up to the dune line beachside, and some overwash at unprotected areas bayside.



Date	Day	Time	Hgt
09/24	Wed	03:45 AM	1.12 H
09/24	Wed	09:54 AM	0.68 L
09/24	Wed	04:28 PM	1.3 H
09/24	Wed	10:49 PM	0.84 L
09/25	Thu	03:49 AM	1.12 H
09/25	Thu	10:19 AM	0.55 L
09/25	Thu	05:26 PM	1.34 H
09/25	Thu	11:33 PM	0.96 L
09/26	Fri	03:48 AM	1.14 H
09/26	Fri	10:49 AM	0.44 L
09/26	Fri	06:27 PM	1.37 H
09/27	Sat	12:22 AM	1.09 L
09/27	Sat	03:47 AM	1.18 H
09/27	Sat	11:24 AM	0.34 L
09/27	Sat	07:36 PM	1.4 H
09/28	Sun	01:28 AM	1.21 L
09/28	Sun	03:45 AM	1.23 H

Above: Predicted tides. ***Does not include impact from wind/wave***. Note gradual increase through the end of the week into early next week. Daily peak tides occur during the late afternoon/early evening Thursday, Friday, and Saturday; all high tides are in orange shading at right. Total values may reach 2.5 feet above mean lower low water, or 1 foot above mean high water which equates to the height of water in unprotected areas bayside, and implies water up to the dunes beachside.

Water up to the dunes on South Padre Island is likely during the daily peak high tide, around or just after sunset, especially Thursday through Saturday. Water could edge into the dunes if tides increase to say 1.2-1.3 feet above predicted. County beaches may need to close for vehicle access at some points Thursday through Saturday if/when water covers much of the beach at and near high tide.

Surf.
Surf roughened up a bit Wednesday afternoon and will continue to be somewhat confused into Saturday. Surf waves are likely to build toward head height (5-6 feet, possibly a tad higher) and remain rough due to the combination of wind waves/wind swell – much caused by numerous storms in the western Gulf moving onshore or near shore. Rip currents will be very dangerous due to the persistent, moderate wind/wave energy arriving at a perfect right angle to the coastline.

Boating/Fishing
In a word? [Continued] Ugly. There may be some breaks in the action during the afternoon and early evening each day, but prime fishing hours (pre-dawn through mid to late morning) will have the most coverage. Those who venture out during these hours will experience locally heavy rains reducing visibility below 1 nautical mile, gusts up to 30 knots, frequent cloud to water lightning, and choppy to rough seas with periodic high waves.

Potential Impacts/Recommended Actions
Flooding. The best chance for flooding will be:

- ***Thursday and Friday***, and perhaps ***Saturday***, from the wee hours through early afternoon along/east of highway 77.
- ***Each afternoon*** in pockets of the mid/upper Valley where persistent and/or stronger cells develop.

Once again, we suggest everyone re-check drainage canals, ditches, sewers, etc. for high standing water and/or debris and clear out this afternoon (east of US 77) to be ready in case bands of flooding rain develop and persist beginning early Thursday. Hopefully by now folks have been checking their vehicle tire pressure, tread wear, brake pads/shoes, and wiper blades and are still ready for more September rainfall.

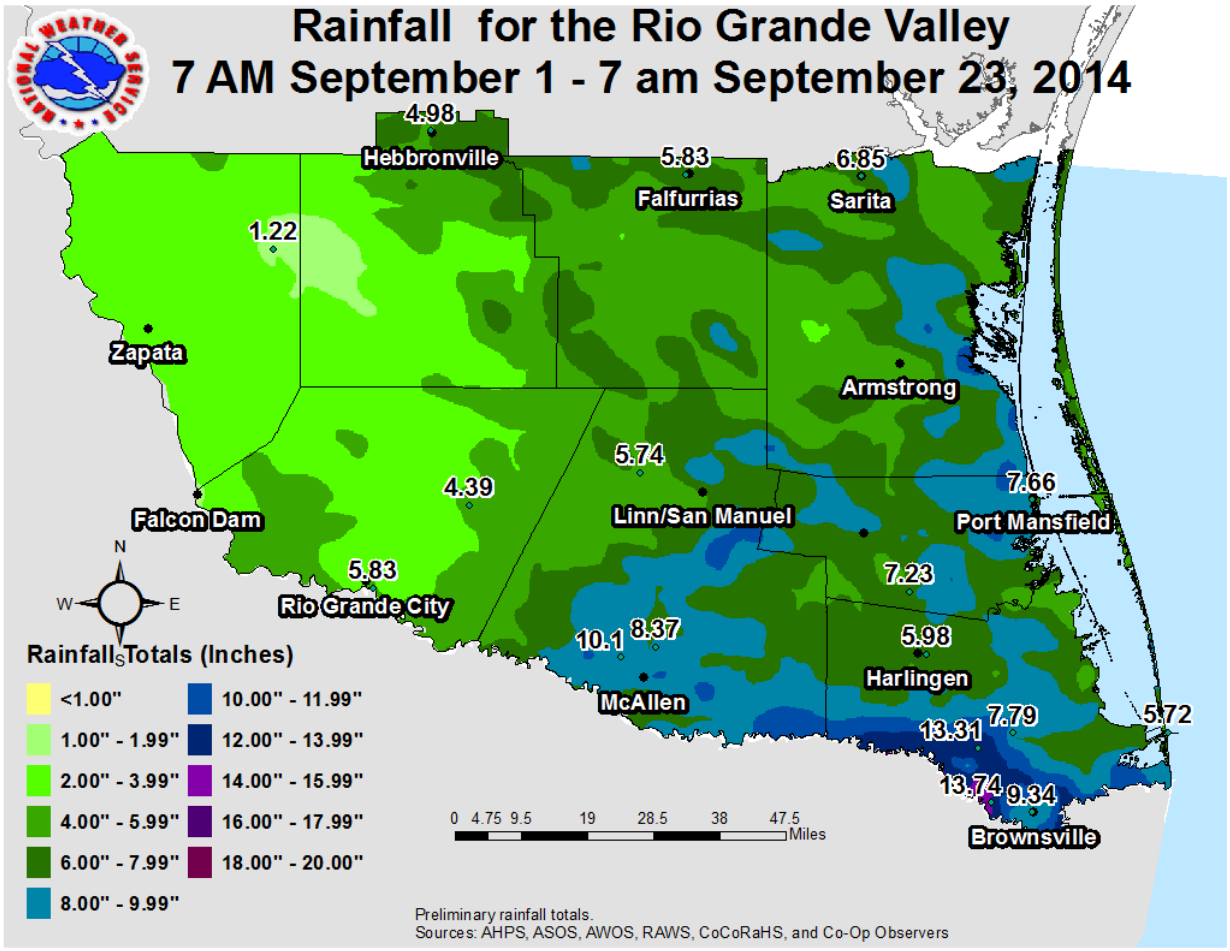
Tides. SPI city/county beach managers should be prepared to move things like trashcans, umbrellas, etc. behind the dune line in case waves run-up toward the dunes over the next few days.

Currents. With plenty of rain, breeze, and nastiness we expect visitor/family beach attendance to be very low. The choppy-rough/confused surf will keep all but the most experienced swimmers/surfers out of the water, though this can serve as a reminder of the dangers.

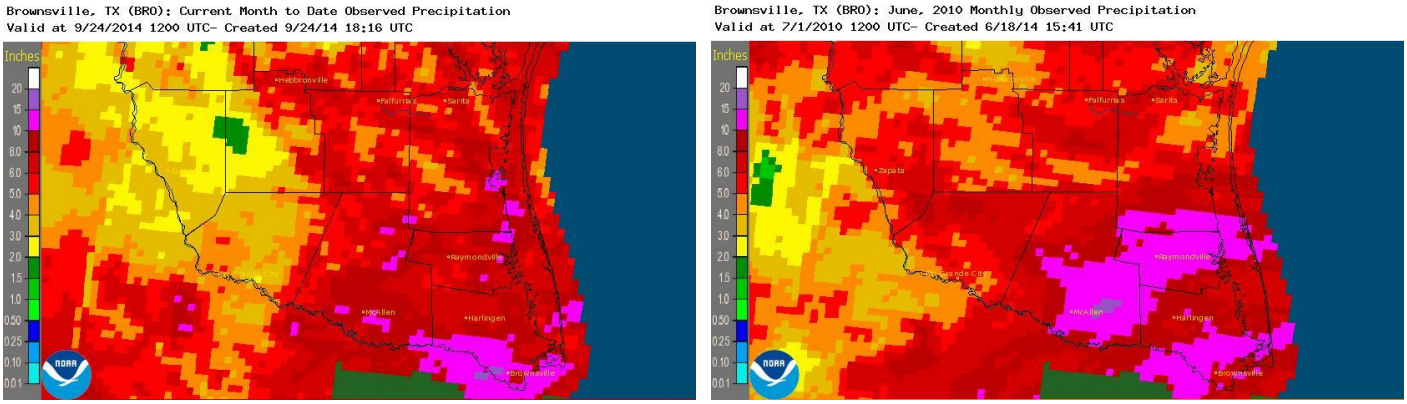
Boating/Fishing. We recommend postponing morning trips until at least Sunday (September 28). Afternoon excursions will depend on “breaks”; Thursday and perhaps Friday do not appear to offer many of them, either.

Stat Pack

How much rain so far? See for yourself (does not include Wednesday's action), next page:



Coverage and amount compare closely with June 2010 (so far) across Texas Climate District 10 (CD-10; Hidalgo, Cameron, and Willacy). The additional rains expected along/east of US 77 *could* push some totals toward the numbers of September 2010, when Hermine (early) and a vigorous tropical wave (mid month) dumped more than 17 inches in a few spots near Brownsville.



Above: Left – September 1-23 2014 observed precipitation. Right – June 2010 observed precipitation. Climate District 10 is Hidalgo, Cameron, and Willacy County – the three counties in the bottom right of the images.

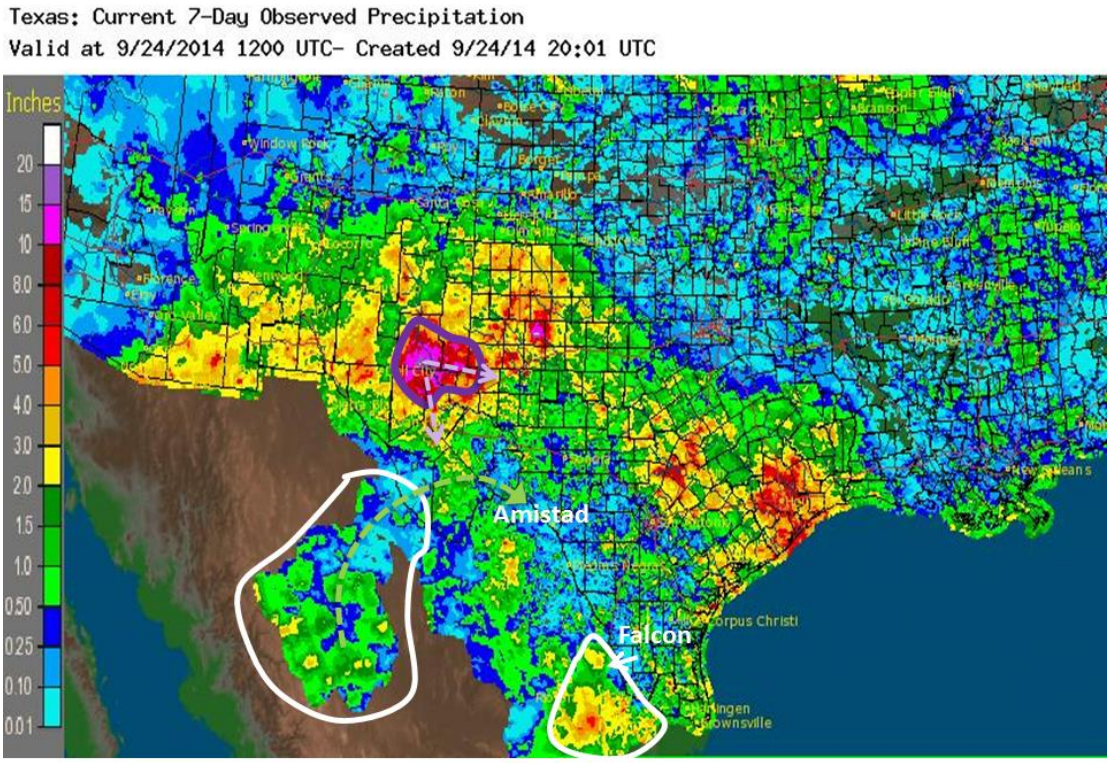
Should this happen, the totals for CD-10 would be the highest for any month since July 2008 (Dolly's month)! Stay tuned; we'll have an full month summary available next Wednesday or Thursday. Later in October, we'll be able to determine whether September 2014 pulled our four-year dry spell above the prior modern record for four years (October to September) in successive years since 1900.

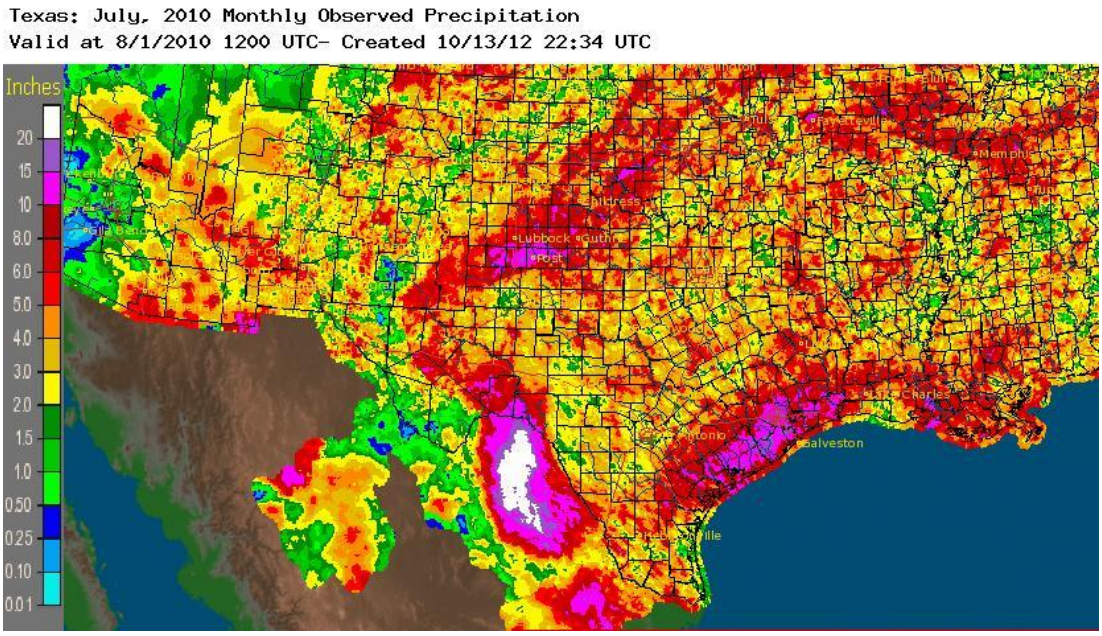
Reservoir Responses – or Not

Earlier this week I had a question about impacts to the Rio Grande Basin from the remnants of Hurricane Odile (the storm that lashed Cabo San Lucas), as well as the recent wet September. The short answer? **None**. The longer answer? You need to look at source region for the recent rains, as well as current reservoir levels compared with those prior to the impact from Alex back in 2010.

Rainfall and Location

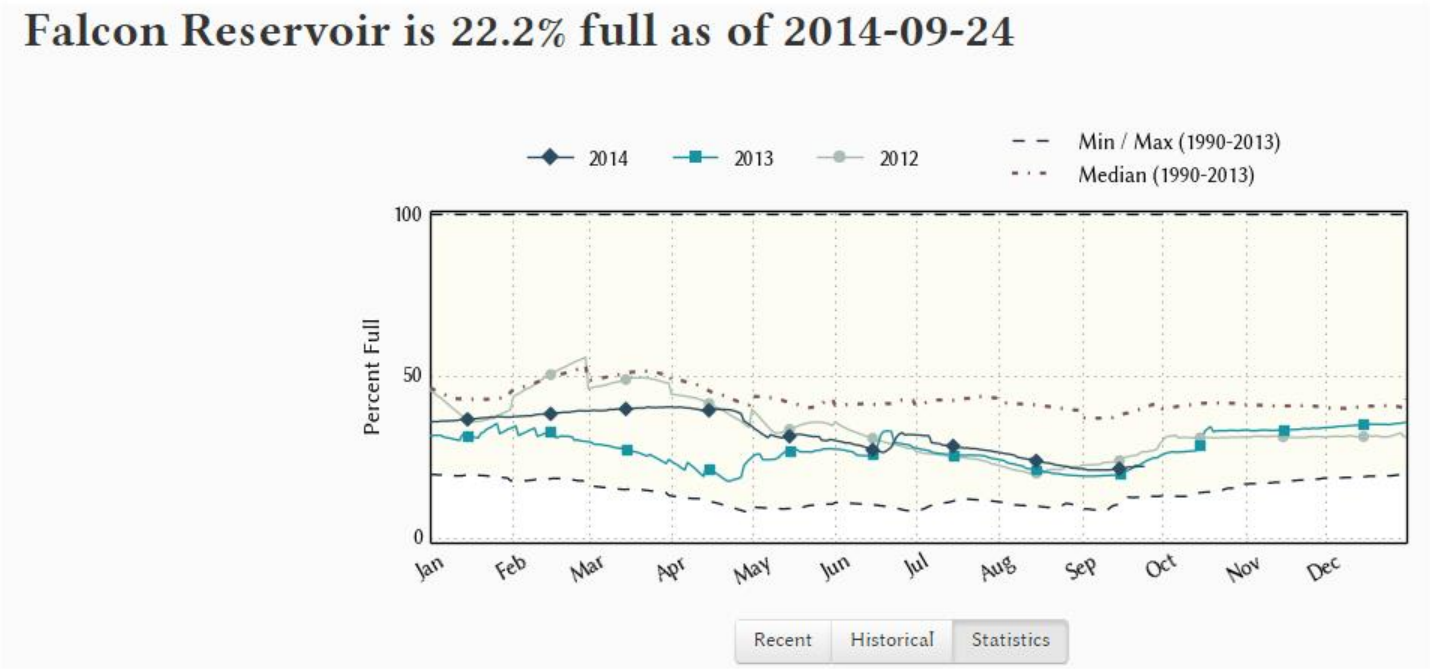
The following graphics tell the tale best.





Above: Top – seven day rainfall, Sep 16-24 (thru 7 AM) 2014, including remnant of Hurricane Odile. White shaded areas are the Rio Conchos and Rio San Juan basins, each which feed the Rio Grande. While some decent rain fell into the Rio Conchos (larger area on left side of map), the best rain fell along the New Mexico/Texas border; runoff will reach the Rio Grande but also aquifers in West Texas. Bottom – July 2010 rainfall in the same areas. Most of this fell between the 1st and 7th; areas in white that flow into Falcon and Amistad may have received 50 to 70 inches!

If you think about these images, the rain that “drained” into the Rio Grande basin from primary locations in northern Mexico the week of September 16-23 was less than 1/10th of that which flowed in July 2010. Add the fact that reservoir levels are much lower today than they were prior to early July, 2010, and there’s plenty more room for water to “fill” both Amistad and Falcon. Amistad is seeing a healthy but small rise in conservation levels – and has recently surpassed the lower values (Texas share) of 2012 and 2013, but none of this increase will reach Falcon Dam. Amistad will easily absorb whatever runoff from the 10-15+ inches that fell in southeast New Mexico and flows through the Pecos River, which empties into Amistad. Falcon has moved little during the past week and that shouldn’t change.



	Date	Percent Full	Water Level (ft)	Height Above Conservation Pool (ft)	Reservoir Storage (acre-ft)	Conservation Storage (acre-ft)	Conservation Capacity (acre-ft)	Surface Area (acres)
Today	2014-09-24	22.2	268.18	-32.92	710,785	344,600	1,551,007	36,620
Yesterday	2014-09-23	22.2	268.15	-32.95	709,653	344,051	1,551,007	36,584
2 days ago	2014-09-22	22.2	268.13	-32.97	709,135	343,800	1,551,007	36,567
1 week ago	2014-09-17	21.6	267.90	-33.20	700,924	335,202	1,551,007	36,302
1 month ago	2014-08-24	22.5	268.39	-32.71	717,995	348,873	1,551,007	36,853
3 months ago	2014-06-24	31.4	271.63	-29.47	840,663	487,086	1,551,007	40,581
6 months ago	2014-03-24	40.4	276.95	-24.15	1,077,882	627,045	1,551,007	47,072
1 year ago	2013-09-24	23.4	264.30	-36.80	579,384	362,514	1,551,007	32,276

Above: Note the lower values on September 24, 2014 compared with September 24, 2013. Each after rainy periods in the Lower Rio Grande Valley south of the reservoir.